

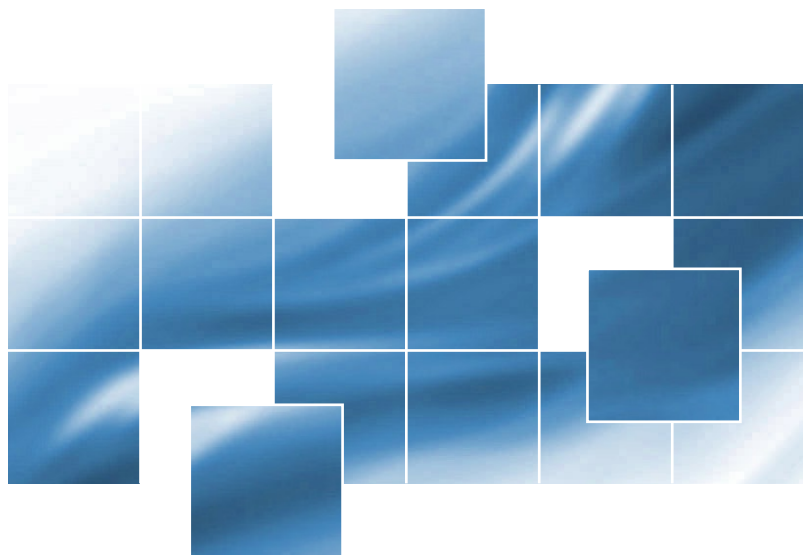


Part 5

A research manager's notebook

Getting to grips with intellectual property

Notes for researchers and research managers



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Introduction

This notebook is the fifth in a series of six in which research managers based mainly in Africa and the Caribbean share their insights, and provide practical guidance on the challenges they have faced in different aspects of their work. See the diagram opposite for an overview of the other booklets in the series.

In this notebook, we focus on intellectual property (IP), and the related issue of technology transfer, which is the transfer (or commercialisation) of technology and innovations that have been developed in an academic environment into a viable and marketable product that can be sold by businesses.

Technology transfer typically involves:

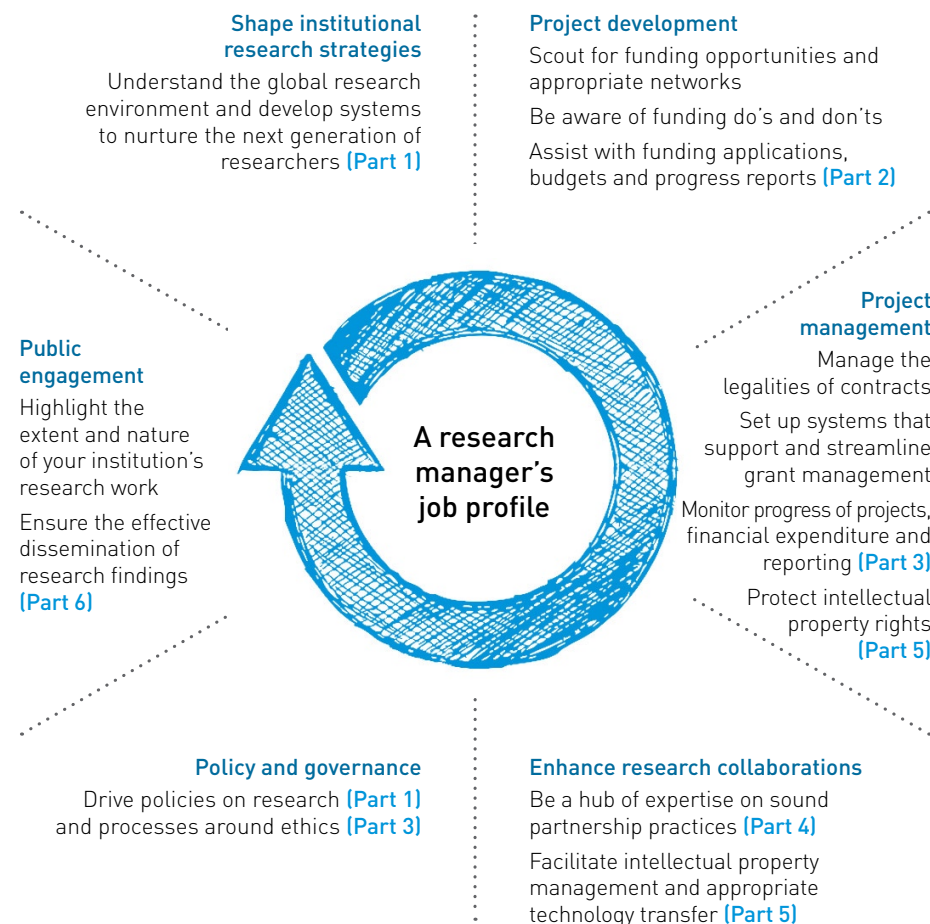
- * Creating new technologies.
- * Protecting technologies through patents or other IP rights.
- * Licensing technologies to commercial companies, or starting new companies to market the technology.



In the course of this notebook, we will outline what you need to know to help your colleagues and your institution to benefit from IP, and avoid being exploited or sidelined by commercial partners that may be more commercially or legally savvy. Also check out [Part 4](#), which focuses on how institutions can build mutually beneficial partnerships, and ensure that IP rights are shared fairly.

Please share your IP and technology-transfer experiences with us at info@research-africa.net, so that we can make these available via the relevant regional research and innovation management networks.

Research management: the skills in brief



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This diagram illustrates the core skills that research managers need, and shows which booklet in the series contains more information on each skill. (In designing this diagram, we drew on the core-competency framework developed by the Association of Research Managers in the UK and the US Society for Research Administrators.)

Facilitating technology transfer: where theory and practice meet?

As some of the world's wealthier nations shift from manufacturing to knowledge-based economies, universities are increasingly being portrayed as knowledge hubs, capable of spearheading technological innovation and economic development. But how true is this? Lots of research takes place that no one intends to commercialise, but this doesn't make it irrelevant. And it is important to distinguish between research that contributes to knowledge, and research that aims to develop useful products that may contribute to economic development.

Many universities in Africa and the Caribbean have been exposed, through training, conferences or institutional visits, to the activities of commercialisation and market-driven development practised in some parts of the globe. For some research leaders, this has led to discussion in their own institutions of the opportunities that their research might be missing out on. Given the broad priorities that many of these institutions engage with, where should IP exploitation fit?

Let's get real

In general, registering a patent to commercialise a new invention pays only if you've managed to develop a ground-breaking product that many millions of people will want to buy or large corporations will pay a premium to use. A large percentage of patent applications fail because they lack originality, and for many others, the costs of international registration far outweigh the income that they are likely to generate. Patents are limited geographically, so for example, a patent registered in an African country is not valid for the Caribbean, and it is extremely costly to register patents internationally. Even in the world's most affluent research environments, the discrepancy between research expenditure and income is vast. Of course, research done in one year may earn income in years to come, but the figures are hardly encouraging for countries that have few resources to start with.

Did you know?

In the USA in 2012, 194 universities and academic hospitals spent \$63.7 billion on sponsored research.

Income earned by these same institutions from royalties or licences in the same year was \$2.6 billion – a mere 4% of what was spent on research.

Of this, \$1.9 billion was earned from royalties, \$64 million came from equity earnings, and \$461.6 million came from other sources. In addition, the 194 institutions filed for about 14,900 patents, just over a third of which were granted, and 705 new companies were set up to sell IP-related products.

(Figures derived from the AUTM US Licensing Activity Survey Highlights, 2012)

Commercialisation has its place, but research impact cannot be evaluated in transactional terms only; that is, in relation to money spent and money earned



This could be you: just starting out...

In 1979, the Nigerian government established the National Office for Technology Acquisition and Promotion (NOTAP) to facilitate the acquisition and absorption of foreign technology, encourage the development of indigenous technology, and promote the commercialisation of research and development conducted in Nigeria. NOTAP is also responsible for facilitating the patenting of products derived from research done at Nigerian universities.

NOTAP has helped establish intellectual property and technology transfer offices (IPTTOs) in several universities and research institutions. The IPTTO at the University of Port Harcourt, for example, strives to ensure that the university's research is innovative and relevant to local industries, and guides researchers on how to commercialise the products of their research.

Professor Samuel Ibodje, director at Port Harcourt's IPTTO, told us that, his office received 22 patent applications between August 2010 and January 2012. However, by mid 2013, just one application had been cleared by NOTAP and passed on for registration.

Or perhaps this is you: slightly further down the road...

Ed Rybicki is a professor of microbiology at the University of Cape Town (UCT) who has helped to pioneer technology transfer activities at his institution. 'Potentially, the cohort of nano-technologists from UCT could successfully patent and commercialise a product directly without going through the research or tech transfer offices' Rybicki told us, 'but they would be unwise to do this as they could be exploited by companies if they do...Few academics have the management and business skills to successfully negotiate the commercialisation of an invention.' He went on to say, 'I know researchers who tried to sell their ideas, or even set up businesses in their garages, without help from a research management or tech transfer office, and they all got burned.'

South African universities first set up tech-transfer offices in the mid-1990s, and UCT took about six years to get its innovation office fully functional. Rybicki remembers that, at first, researchers worked together to try to learn everything they could about patenting processes. 'Adhering to these processes was extremely time-consuming for academics. Now, skilled attorneys specialise in this, but they have really only emerged in the last ten years.'

Few universities in Africa or the Caribbean have sufficient infrastructure or funding to file as many patents as they might like. In South Africa, filing a patent is cheaper than in the USA for instance, but Rybicki advises that this is not something any individual should try to do alone: 'If you have no access to a tech-transfer office, find a lawyer who knows about patent law.'



Ed Rybicki's top patenting tips

Ed Rybicki is a professor of microbiology who has helped to pioneer technology-transfer activities at the University of Cape Town in South Africa.



Ed Rybicki
Professor of Microbiology
University of Cape Town, South Africa

Make no details about your invention public before you file for a patent. If you want to discuss the invention with your colleagues, do so only in closed meetings where registers are taken, and where discussion begins only after participants have sworn themselves to confidentiality. You may even have to embargo certain PhD theses for a time so that no one else can publish the work before the patent has been filed.

Make sure you have a good attorney. Commercial companies may try to exploit academic institutions by forming not-for-profit companies or an NGO into which they 'shuffle' the invention for 'further development' before commercialising it. This can be a strategy to diminish your research institution's contribution to the process, and thereby reduce your share of the profits.

The costs of registering a patent, especially in more than one country, make institutional backing fairly essential.

Is technology transfer only for the well resourced?

Should universities in low- to middle-income countries simply abandon the notion of technology transfer? Perhaps not. Is some income better than none? Perhaps, in our context, technology transfer can encourage researchers to make their work relevant in a practical way? Perhaps we need to figure out how to make IP and technology transfer work for us?

Many countries in Africa and the Caribbean have reserves of indigenous knowledge to offer to the world, and technology transfer offers one way for these countries to benefit from this IP. But, it's not just about the money – technology transfer can help to enhance the reputations and credibility of institutions and researchers. Besides, not all researchers conform to the stereotypical biotechnologists who require high-tech laboratories, expensive trials and multinational pharmaceutical companies to commercialise their work. Technology transfer can focus on important local needs – for example, improving water-harvesting or irrigation techniques, developing low-cost building materials that are less porous, or partnering with local industries to ensure that our curricula and qualifications deliver the skills that graduates need.

South Africa had some important successes with patents when a UK-based company helped South African biotechnology researchers to file patents not only in South Africa, but also in 25 European countries through the European Patent Office. This is just one example of a growing trend whereby wealthier partners provide skills and resources to research managers and technology-transfer offices, not only to support technology transfer, but also to secure more robust and lasting cross-regional partnerships.

Commercialising a product without expert assistance often leads to overselling or underselling an invention. In the colonial past and even today, Africans had to give up their IP to people from abroad. This is especially true of plant resources in the sub-Saharan region. Traditional compounds are being identified, and indigenous knowledge is being captured by academics who are not necessarily African. We need genuine partnerships to feed the technology-transfer pipeline.

- Saberi Marais, INNOVUS, Stellenbosch University, South Africa

This could be you: preparing to compete worldwide

According to a report in the *Jamaica Observer*, in December 2010, local scientist, Dr Henry Lowe, 'threw a lifeline to men worldwide' when he announced that he had developed a product from a species of moss found in Jamaica that can reduce, and may even eliminate, prostate cancer. Jamaica has one of the highest rates of prostate cancer in the world.

Lowe's research attracted worldwide attention, and a company, the Bio-Tech R&D Institute, was formed to help develop and market the product. Jamaica's four leading research institutions – the University of the West Indies, the University of Technology, the Northern Caribbean University and the Scientific Research Council – all became shareholders in the company, each with a 2.5 per cent stake.

The Bio-Tech R&D Institute also formed a partnership with the University of Maryland's Medical School in the US, to help get the product patented there. 'The market for this is tremendous and... if we get the right thrust and the right support, we have hundreds of millions of US dollars which can come to Jamaica,' said Lowe. Dr Joseph Bryant from the Medical School agrees: 'We cannot overemphasise what this means for the country.'

The quotes by Dr Lowe and Dr Bryant are from an article by Vernon Davidson, entitled '*Jamaican Scientist Makes Prostate Cancer Breakthrough*', in the *Jamaican Observer*, 3 December 2010.

Business partnerships: dancing with the devil or waltzing to wonderland?

Market forces are driving research in ever more practical directions and funding for arts, language and humanities programmes is shrinking dramatically. As a result, universities are facing stark choices about the nature of the services they provide, and the role they wish to play in society.

This begs the question: are partnerships between businesses and universities perhaps beneficial to both sides? Certainly, new pools of expertise, ideas, and innovative approaches have grown through such partnerships, but how are universities and researchers affected by shifting their focus from teaching and research, to seeking out potentially lucrative ideas and products?

A simplistic view of the historical differences between traditional universities and business corporations reveals how far apart they once were and how similar they are now. Universities are starting to resemble businesses in some startling ways.

Historical differences between universities and businesses

	Businesses	Universities
Primary purpose	Make a profit	Share knowledge
Accountability	Shareholders	State and society
Operational environment	Competitive market	Academic freedom
Time pressures	Linked to profitability	Variable, open-ended
Research results	Keep trade secrets	Disseminate, share

However, some academic institutions have managed to straddle the narrowing divide between academia and industry, and have derived various benefits from cultivating a closer relationship with the corporate world.

Benefits for universities, businesses and society

Establishing relationships with businesses can help universities to obtain corporate funding via bursaries, and job placements, thus allowing them to accept more students and attract better staff. University employees, from research associates to administrators, also stand to learn new skills as they engage with the demands of businesses and the commercial environment.

Universities that take such relationships a step further, and invest in technology transfer, can gain additional income streams from licensing fees, and are sometimes able to steer their graduates into ready-made careers.

For businesses, forming a relationship with an academic institution means tapping into a pool of innovation. If improved products reach the market, businesses grow, jobs are created and both companies and universities can contribute to economic development.

In theory, the real benefit of technology transfer is that it encourages innovation - the finding of new answers to big problems.



This could be you...forging partnerships with industry

The African University of Science and Technology (AUST), established in Abuja, Nigeria in 2007, aptly demonstrates the potential of a symbiotic relationship between universities and businesses. AUST is a small university, and by 2013 it had just 110 students enrolled. According to Wole Soboyejo, president and provost of AUST, the university tries to engage industry as partners, by creating industry advisory boards:

"This partnership is important because, until recently, many industries complained about the lack of expertise and background of many African students. Now, by partnering with companies such as Total, Chevron and Mobil, we better understand their needs, and are able to offer the students a more dedicated education pathway. In addition, these industries send us experts who teach application aspects, to make our students' curricula even more complete."

As a result of this collaboration, the university's research budget increased from US\$1 million to US\$5 million between 2011 and 2012.



Or this could be you: establishing a technology-transfer office

At the Nelson Mandela Metropolitan University (NMMU) in South Africa, the technology transfer office is located in the office of a deputy vice-chancellor for research, technology and planning, and works closely with the university's research-management and research-capacity programmes.

South Africa has a national policy on the protection and exploitation of IP developed at state-funded universities. In following the policy, NMMU has made the technology-transfer office responsible for:

- Assisting researchers to obtain and negotiate externally funded research grants.
- Managing such externally funded grants.
- Managing the commercialisation of the university's IP.

Research-grant contracts usually make provision for IP rights and these have to be carefully negotiated so that research outputs can be transferred to industry and/or made available to civil society as appropriate. NMMU's management believes that its technology transfer activities complement the university's mission of creating and disseminating knowledge with the aim of playing a role in regional innovation and economic growth.



Successful innovation and technology transfer can bring financial benefit to the university, but the most important aspect of technology transfer is to create societal benefit, create jobs and increase economic wealth.

- Jaci Barnett, Director of Innovation Support and Technology Transfer, Nelson Mandela Metropolitan University, South Africa

Four key questions to ask about IP rights

As a research manager, in the absence of a specialist or technology transfer officer, you may be expected to advise researchers on IP, or to help negotiate the contractual arrangements related to research projects undertaken by your institution. To play this role effectively, you will need to know the answers to the following four questions:

- ① Which IP rights are most suited to your context (patent, copyright, design right, etc.)?
- ② What kinds of access and usage do these rights provide, and what do they prohibit?
- ③ What responsibilities are embedded in these rights?
- ④ Do you need to manage and/or monitor the usage of these IP rights, and if so, what is the most efficient and cost-effective way of doing this?

Before you attempt to answer these questions, make sure you understand the concepts outlined on the next few pages...

Understanding the basic concepts

Legal practice linked to IP has become so complex that even specialists find it difficult to navigate, but the basics are simple enough.

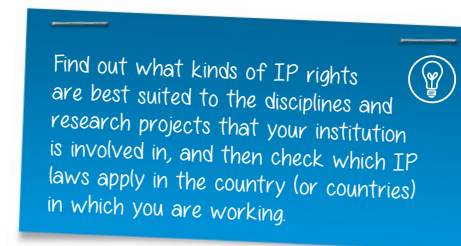


IP rights and some of the forms they take

A variety of different IP rights cover different types of IP. In other words, specific disciplines have developed IP rights that best suit their own work. So, IP generated by botanists, for example, generally requires a different kind of protection to IP created by social scientists or mathematicians. Different kinds of IP rights also enable creators and inventors to derive value from their IP in different ways.

Examples of IP rights include patents, copyright, trademarks, industrial-design rights, trade secrets, etc. and some of these are discussed on the next page. Some of these rights (such as copyright) are automatic and require no registration, but others (such as patents) involve complex registration processes.

However, specific rights are also dependent on the legislation that countries have about IP. The *Adams & Adams Africa IP Law Guide* is a useful online resource that outlines levels of IP protection available in each African state.



Copyright covers a broad range of products including literary works, reference works, newspapers, books, computer programmes, databases, films, musical compositions, choreography, visual art, architectural designs, advertisements, maps, technical drawings, research findings, and so on. Copyright regulates the rights of usage, reproduction, recording and translation of such works. The UK government website on IP has some useful information on copyright (see www.ipo.gov.uk).

In the early 2000s, the 'copyleft' movement developed creative commons licences. These licences allow researchers to opt out of certain restrictive aspects of copyright, and give others the right to freely share and quote from their work. Wikipedia, for example, is published under a creative commons licence.

Patent rights: a patent is a set of exclusive rights granted by a state, or a regional patents office such as the European Patent Office, to an inventor in exchange for disclosure about the invention. A patent protects the inventor from other individuals or organisations making, selling, distributing, copying or using patented information without the patent owner's permission, within that state for a specified time, usually 20 years. The patent owner can assign, sell, share or transfer their patent through licensing agreements.

[See page 8 of this notebook for one expert's tips on patenting, and '*Inventing 101: Do I Need a Patent, Trademark, or Copyright?*' compiled by Mary Bellis for *About.com*.]

Plant-variety rights give plant breeders exclusive control over new varieties of plants that they develop, provided these can be proven to be distinct, stable and uniform. These rights are subject to local legislation, and relate to control over the propagating material (including seeds, cuttings, and tissue cultures) and harvested material (cut flowers, fruit, foliage) of a new variety for a number of years.

Industrial design rights protect the physical design of products that are intended for industrial manufacture.

Trademarks identify a particular business as the exclusive source of a specific set of goods or services. The law considers the unauthorised use of a trademark to be brand piracy, which is a type of fraud.

Indigenous knowledge and IP rights

When community members innovate within the traditional knowledge framework, they may use the patent system to protect their innovations. However, traditional knowledge as such - knowledge that has ancient roots and is often informal and oral - is not protected by conventional intellectual property systems. This has prompted some countries to develop their own *sui generis* (specific, special) systems for protecting traditional knowledge. [See World Intellectual Property Organisation http://www.wipo.int/pressroom/en/briefs/tk_ip.html]

The making of an international instrument to safeguard indigenous knowledge appears to be complex and is still in process. Charles Masango's 2010 article, *Indigenous traditional knowledge protection* provides fascinating reading on developing a mechanism for such safeguarding.

Where to find more detailed information about IP rights

- **Afro IP** is a useful blog that provides news, information and comment on IP law, practice and business deals right across Africa, and can be found at <http://afro-ip.blogspot.com/>
- **IP in the Caribbean** is a blog that tracks developments related to copyright, patents, trademarks, breaches of confidence, and related IP rights in English-speaking Caribbean countries. See <http://ipcarib.blogspot.com/>
- **The World Intellectual Property Organization** is a United Nations agency that aims to promote the use of IP as a means of stimulating innovation and creativity. They offer a number of services to member states and their website has some useful resources. See www.wipo.int
- **The African Regional Intellectual Property Organisation** has 18 member states and serves mainly English-speaking African countries. The organisation aims to strengthen and harmonise IP laws among its members, and its website contains a number of resources. See www.aripo.org
- **Organisation Africaine de la Propriété Intellectuelle** has 17 member states, serves mainly Francophone African countries, and sees its mission as protecting the IP and assisting in the commercialisation of its members' IP assets - see www.oapi.int
- **The IP Handbook of Best Practices** is a useful online publication aimed at policymakers, research managers, technology-transfer managers, and researchers. The Handbook contains detailed information, case studies and sample agreements, and the website is frequently updated at www.iphandbook.org. There is also a blog to which one can direct queries, at <http://blog.iphandbook.org>.

So what do research managers need to do about IP?

Okay, now that you have armed yourself with some of the basic information, what is the next step? Most research institutions start by formulating some generic responses (that is, IP policies) to the IP generated by their researchers, so that they don't have to reconsider these issues each time an innovation is developed.

The role of disseminating information about these policies, and then implementing and monitoring them, is usually delegated either to a research manager or to a technology-transfer office, or to a combination of these.

More affluent universities tend to employ legal experts and other specialists to advise and monitor the implementation of their IP policies. Such specialists are still relatively rare in African and Caribbean countries, where the task of managing IP is often allocated to already overstretched research managers. Where technology-transfer officers are appointed, it is important that they and the research-management team work closely together.

IP is an asset, and like most other assets, if no one pays attention to it, it tends to decrease in value.



Establish an IP policy

Research managers and technology-transfer officers are often expected to advise researchers on which forms of IP rights are most appropriate to their work. Your ability to offer sound advice is likely to be greatly enhanced if your institution has a comprehensive and considered IP policy. If your institution doesn't yet have an IP policy, your first step could be to find out about other institutions' policies, and then lobby your management to allocate time to developing one suited to your institution.

A closer look at IP policies

Typically, IP policies define an institution's position on:

- Ownership and use of IP rights to inventions and other creative works.
- Disclosure of information versus confidentiality.
- Trade secrets and their protection.
- The filing of patents.
- Trade names and their formal definition.
- Trademarks, including their creation and lodging.

Well-designed IP policies:

- State the institution's rights in relation to IP developed by researchers they employ.
- Outline what the institution expects from researchers in relation to confidentiality and disclosure of information.
- Provide guidance on the institution's preferred processes and options for registering IP.
- Correlate with the institution's policy on research partnerships or consortia.

Protect your institution's IP in research collaborations

Clarity on who owns IP is critical in collaborative research. To reach this clarity, research partners need to consider if either institution is bringing any IP into the partnership at the outset (this is sometimes known as 'background IP'), and, if so, how this can be protected.

Then, as the research proceeds, both parties must continually discuss what new knowledge is being generated (sometimes called 'foreground IP'), and whether this might be commercially valuable. If the work has some commercial value, the researchers need to work out how to share their information so that all parties benefit fairly from the income they generate.

Research agreements need to be deftly crafted to clearly outline the roles, rights and responsibilities of all researchers, as well as the consequences of breaching the agreement. Remember that IP agreements can only be effective if they are fully understood, and if all partners know that they will be enforced.

People can walk away with data you collected and publish it. Get to know your partners. Build relationships. Decide upfront who will be the lead and second author, etc.
- Simon Schaaf, researcher, Stellenbosch University, South Africa

Clarify expectations about IP before you start

Researchers and innovators who collaborate on projects often have unspoken expectations. Mutually agreeing to a set of rules at the outset can help to make those expectations explicit, and ensure that the relationship avoids bickering and even litigation.

Six questions to clarify about IP before signing a partnership agreement

- ① Is there a confidentiality agreement that all agree on, and have all the necessary people signed it?
- ② How will research data be secured and managed? Affiliated research institutions should have access rights, but exactly who has use and publication rights will need to be agreed on and written into the agreement.
- ③ Will any party have the right to grant sub-licences in relation to access, use and publication?
- ④ Are publication embargoes necessary? Who will be cited as lead author, second author, and so on?
- ⑤ What unique skills does each partner have? Is it appropriate that these skills are shared with other partners, and if so, how?
- ⑥ What processes will be followed if any party has a grievance about IP, and if the researchers are spread across more than one country, which country's laws will be used to settle disputes?

Check out Part 4, which focuses on research partnerships.

Watch out for embedded inequalities and encourage knowledge-sharing

As stated in Part 4, high-income institutions sometimes set conditions that disadvantage the low-income partner. For example, the high-income partner might try to claim exclusive ownership of IP rights, or research sponsors sometimes try to claim exclusive data or sample ownership, even when they play no role in collecting the data.

Ethics and the principles of honesty, accountability, professional courtesy and fairness are fundamental to how ownership of IP is allocated. The 2010 [Singapore Statement on Research Integrity](#) provides a very useful guide to these issues.

However, Ivor Sarakinsky from the School of Public and Development Management at the University of the Witwatersrand in South Africa notes that encouraging academics to protect their research can create divisions and discourage knowledge-sharing. Sarakinsky argues that incentives related to IP rights tend to foster competitive behaviour, and get in the way of collaboration. 'As you talk about IP, you are talking about individualisation. Rewarding the production of knowledge can result in a whole range of perverse behaviours,' he says. Similar concerns initiated the open access movement, which is discussed next.

Understand open access

In 2003, a filmmaker called Neil Curry directed a film called *The Elephant, the Emperor and the Butterfly Tree*. Shot in Botswana, and screened in the United Kingdom, the documentary won several accolades for its exploration of Africa's mopani-woodland ecosystem. Curry had great plans to use the film to help educate schoolchildren and visitors to local wildlife parks in Africa about the benefits of conservation.

But Curry's dreams of screening the film in Africa were subject to the requirements of his funder, the BBC's Natural History Unit, which claimed all rights to print, publish, or screen the film. When Curry requested a single copy of the DVD he waited two years for a response. Although the film has since been made available on <http://watchdocumentary.org/>, it took several years before Curry's film could be freely shared in this way.

Curry's predicament will be familiar to many researchers who publish their work in scholarly journals, and can end up having limited or no access to the published articles unless they (or their institution) pay hefty fees for the privilege.

Many believe that restricting access to scientific knowledge only to those who can afford to fund research, or purchase costly subscriptions to academic journals, is unjustifiable and immoral. Moves to get rid of such restrictions gave rise to the global open access movement, which has expanded rapidly since the 1990s.

More pros than cons?

Supporters of open access argue that, where research is funded using government grants (that is, taxpayers' money), the taxpayers should have the right to access both the research data and the results.

The fact that information can now be made available wherever people have access to computers and the internet has given the movement a significant boost. Increasing numbers of research and funding institutions are realising

that a wider distribution of their research offers them the potential of wider exposure and deeper impact, not to mention higher citation numbers.

Open access offers an opportunity for researchers and academic institutions to rethink what constitutes research impact, how to reward scholarship and how to encourage research sharing – issues of particular importance for the developing world. However, like any new product or system, open access requires the refinement that follows wise and perceptive use (see [Part 6](#), which also touches on the issue of open access).

Consider the managerial implications of your choices

The small number of technology-transfer offices that exist in African and Caribbean universities typically manage patents. A few have tried to set up companies to sell IP products directly to the market.

However, when industries and universities engage in technology-transfer processes, it may become necessary to integrate the research and development activities of one or more commercial companies with a university or a faculty's research programme.

Ensuring that such integration takes place efficiently and effectively is tricky to say the least, and is likely to raise a range of IP issues. If your institution decides to follow this route to commercialisation, try to network with other research managers to find out how they have managed this process, and learn from their experience.

Remember that IP is useless if it is not used. Keep it, sell it or share it, but always aim to manage it appropriately.



To do:

- Look at Institutional policy
- Define position in terms of IP aims
- Network
- Find out more on IP
- Training Courses in IP?

Useful resources

Association of University Technology Managers (2012) *Highlights of the AUTM U.S. Licensing Activity Survey: FY2012*. Available online at <http://www.autm.net/>

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